Remarks

Claims 1-42 are pending. Claims 10-42 are withdrawn in accordance with the Examiner's previous restriction requirement. Claims 1 and 5-7 are amended for clarity. Claims 1-8 are presented for examination.

The Examiner rejected Claims 1-8 under the non-statutory obviousness-type double patenting doctrine as being unpatentable over Claims 1-10 of U.S. Patent 6,611,757, Claims 1-20 of U.S. Patent 6,427,121 and Claims 1-11 of U.S. Patent 6,301,545. As the Examiner has not indicated allowable subject matter in Claims 1-8, Applicant submits that the Examiner's rejection is premature. When the Examiner indicates allowable subject matter in these claims, but for their rejections under non-statutory nonobviousness-type double patenting, Applicant will submit a terminal disclaimer to obviate the rejection.

The Examiner also rejected Claims 1-8 under the provisional non-statutory obviousness-type double patenting doctrine as being unpatentable over Claims 1-19 of U.S. Patent Application Publication 2002/0138,199, and Claims 1-23 of U.S. Patent Application Publication 2001./0039475. As the Examiner has not indicated allowable subject matter in Claims 1-8, Applicant submits that the Examiner's rejection is premature. When the Examiner indicates allowable subject matter in these claims, but for their rejection under non-statutory nonobviousness-type double patenting, Applicant will submit a terminal disclaimer to obviate the rejection.

The Examiner rejected Claims 1-8 under 35 U.S.C. § 112, second paragraph, as being indefinite. The Examiner states:

> In claim 1, it is not clear what all is meant and encompassed by the phrase, "the correlation snap shot comprises a set of fixed-point correlator sums and a range offset

> in chips." Although the specification disclose the above phrase, there is no explanation of the meaning of the claimed limitation, "the correlation snap shot comprises a set of fixed-point correlator sums and a range offset in chips"
>
> In claim 5, it is not clear what all is meant and encompassed by "passive standby circuit." Although mention in the specification and disclosed in the drawings, the meaning of the above limitation is not provided.

Applicant respectfully traverses the Examiner's rejection. With respect to Claim 1, the terms "correlation sums" and "chips" are terms of art readily understood by those skilled in the art. For example, in U.S. Patent 5,781,156 ("Krasner"), on which the Examiner relied for his 35 U.S.C. § 102(e) rejection, explains that the term "chip" refers to a time duration in a code period, and "correlation" as a process in which a product of a received signal and a reference signal is summed or integrated over time:

> Virtually all known GPS receivers utilize correlation methods to compute pseudoranges. These correlation methods are performed in real time, often with hardware correlators. GPS signals contain high rate repetitive signals called pseudorandom (PN) sequences. The codes available for civilian applications are called C/A codes, and have a binary phase-reversal rate, or "chipping" rate, of 1.023 MHz and a repetition period of 1023 chips for a code period of 1 msec. The code sequences belong to a family known as Gold codes. Each GPS satellite broadcasts a signal with a unique Gold code.
>
> For a signal received from a given GPS satellite, following a downconversion process to baseband, a correlation receiver multiplies the received signal by a stored replica of the appropriate Gold code contained within its local memory, and then integrates, or lowpass filters, the product in order to obtain an indication of the presence of the signal. This process is termed a "correlation" operation.

Thus, Applicant submits that Claim 1 complies with 35 U.S.C. § 112, second paragraph. Moreover, contrary to the Examiner's contention, these limitations are fully explained in Applicant's Specification, at page 9, lines 19-31:

> The correlator 54 receives the carrier frequency from the

> PLL/VCO 40 and prepositioning information from the microcontroller 60. The correlator 54 performs correlation functions on GPS signals received by the antenna 28 and processed by the GPS RF/IF 58 and ADC 56. Correlation sums are provided to the microcontroller 60 and forwarded to the RF transceiver 52 for transmission, as a correlation snapshot, to the interrogator 12.
>
> As previously mentioned, the transponder 14 (FIG. 1) is designed to transmit a correlation snapshot 34 back to the interrogator 12. The correlation snapshot 34 is the sampled coarse acquisition (C/A) code correlation function between the received GPS signal 20 and a replica generated at the tag 14 at regular offsets of some fraction of a chip over the range of at least a full chip. The correlation snapshot 34 is obtained as the set of correlator outputs summed over an integration interval and transmitted as a set of fixed point values.
>
> (emphasis added)

With respect to Claim 5, contrary to the Examiner's contention, Applicant's Specification, at page 8, lines 10-17, explains that the standby circuit "standbys" to turn on the power supply, when required, while the main portion of the circuit (i.e., transponder 14) is powered down, for the purpose of power management:

> ... During periods of inactivity, the transponder 14 is essentially powered down with the receiver 30 feeding the passive standby circuit 46. The passive standby circuit 46 is a tuned filter that includes a precision diode detector, a low-pass filter, and a comparator that drive the gate signal of the MOSFET power supply control 48. An RF signal at the resonant frequency causes a build-up of the low-pass filter DC output voltage until it passes the threshold and triggers the comparator to switch on the power supply. ..

Thus, Claim 5 also complies with 35 U.S.C. § 112, second paragraph.

Thus, Applicant respectfully requests that the Examiner withdraw his rejection of Claims 1-8 under 35 U.S.C. § 112, second paragraph, reconsider and allow Claims 1-8.

The Examiner rejected Claims 1-3, and 8 under 35 U.S.C. § 102(e) as being anticipated by Krasner. With respect to Claim 1, the Examiner states:

Regarding claim 1, Krasner discloses a communications system (fig. IA) for determining the position of an object (20, mobile remote unit), said system comprising:

an interrogator (10, base or reference station) remote from the object 20, the interrogator adapted to:

receive GPS signals from GPS satellites (see GPS antenna 12, fig. 1; col. 7, lines 57-60);

for one of the GPS satellites associated with the GPS signals, transmit prepositioning data (i.e. positioning data e.g. Doppler shifts, pseudorange "col. 6, line 25", etc is pre-established or computed first by the interrogator i.e. "base station 10" and sent to the object 20 before an accurate position of the object 20 is computed using the precomputed sent data. See data link 16, fig. 1A) for the GPS satellite, including a pseudorandom noise (PRN) code number (see unique Gold code or C/A code for civilian applications, col. 2, lines 2-14, i.e. each satellite is given a number or. unique Gold code for identification of that particular satellite; col. 11, lines 17-21; col. 5, lines 66 to col. 6, lines 1-2), a Doppler frequency offset (col. 11, lines 60-66) and a code phase offset (col. 11, lines 28-35; col. 5, lines 66 to col. 6, lines 1-2) and a tracking signal (see satellite identity, col. 6, lines 21-26; col. 11, lines 61-66) including reference time (epoch, col. 5, lines 66 to col. 6, lines 1-2) and frequency information (col. 11, lines 17-20; col. 5, lines 66 to col. 6, lines 1-10); and

determine a pseudorange (col. 11, lines 28-35) associated with a received correlation snapshot (a snap shot is the collection of data such as PRN or PN frames in a given period of time; col. 11, lines 28-35; col. 12, lines 10-12), wherein the correlation snap shot comprises a set of fixed-point correlator sums and a range offset in chips; and

a transponder (i.e. all the circuit blocks disposed on mobile unit 20) positioned on the object (mobile unit 20), the transponder adapted to:

receive (i.e. at 26, 22) the pre-positioning data and the tracking signal (see data link 16, fig. IA; col. 11, lines 61 thru col. 12);

collect RF samples of the GPS signals (col. 11, lines 61 thru col. 12);

correlate (col. 12, lines 61-67) the RF samples of the GPS signal against replicas of a GPS signal based on the PRN code number, the Doppler frequency offset, and the code phase offset in the pre-positioning data and the reference time and frequency information in the tracking signal to produce the correlation snapshot (col. 1, lines 66 thru. col. 2, lines 1+; col. 12, lines 61+); and

transmit (fig. 3, col. 12, lines 49 thru col. 13, lines 1+) the correlation snapshot to the interrogator (10, base or reference station).

Applicant respectfully traverses the Examiner's rejection. While the Examiner's reads Claim 1's limitation "interrogator" on Krasner's base station 10, the Examiner refers to Krasner's col. 11, lines 17-35, 61-66, and col. 12, lines 10-12 to meet limitations on circuits of the interrogator. However, in Krasner's col. 11, lines 17-35 and col. 12, lines 10-12, Krasner describes the functions performed by DSP 32 (see, Krasner, at col. 11, lines 5-16), which Krasner discloses to be part of mobile or remote unit 20 (See, Krasner's Fig. 1A and accompanying description at cols. 5-7) and not part of Krasner's base station 10. Therefore, the Examiner's reading of Krasner's base station 10 on Claim 1's "interrogator" limitation fails. Thus, contrary to the Examiner's contention, Krasner neither discloses nor suggests Applicant's Claim 1. At least for this reason, Applicant respectfully submits that Claim 1 and its dependent Claims 2-8 are each allowable over Krasner. Reconsideration and allowance of Claims 1-8 are therefore requested.

For the above reasons, all pending claims (i.e., Claims 1-8) are believed allowable. Their allowance is therefore requested. If the Examiner has any question regarding the above, the Examiner is respectfully requested to telephone the undersigned Attorney for Applicant at (408)-392-9250.

Respectfully submitted,

Edward C. Kwok
Attorney for Applicant(s)
Reg. No. 33,938

Law Offices of
MacPherson Kwok Chen & Heid LLP
2033 Gateway Place, Suite 400
San Jose, CA 95110
Tel: (408) 392-9250
Fax: (408) 392-9262